E3 *Daubert* Challenges to Fingerprint Science: Legal and Scientific Update

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After attending this presentation, attendees will understand the issues being raised worldwide regarding the reliability of fingerprint science. Recent court decisions have generated questions regarding the consideration of fingerprint identification as a reliable science. *Daubert* hearings are now challenging a science that has been considered sound for over one hundred years.

This presentation will impact the forensic community by explaining the basis behind the use of fingerprint identification as a reliable science and addressing the issues raised in recent *Daubert* challenges.

The science of fingerprint identification has been widely accepted by the scientific community and courts of jurisdiction since 1903, when fingerprints replaced the failed Bertillon system as the method for identifying individuals. The use of fingerprints as a means of identification dates back hundreds of years, but it was Sir Francis Galton in 1892 who outlined the unique characteristics of friction ridge skin, and their application to positive identification. Since that time, fingerprints have been used to identify individuals arrested and imprisoned, to convict the guilty, to exonerate the innocent, and to positively identify human remains. Governments around the world use fingerprints to identify individuals for purposes such as: employment, military service, adoption, and licensing. Fingerprints have long been accepted by those who work in the criminal justice system: police personnel, attorneys, and judges alike.

The scientific basis for the use of fingerprints as a positive means of identification is that they are permanent and individually unique. That is, the friction ridge skin begins to form on round, volar pads on the fingers, palms, and soles of the feet, during the 6th week of gestation. The friction ridge skin is formed as a result of arbitrary stresses and pressures against the volar pads during fetal development. The differential in these stresses and pressures are what make the ridge formation unique. Even in the case of identical twins, all twenty fingerprints will have unique ridge arrangements. Barring accidental or surgical removal or permanent scarring or deformation of the fingers, the ridge arrangement of an individual will remain permanent from gestation to decomposition after death.

With the introduction of the *Daubert* standard in 1993, a realization occurred to the legal community fingerprint science had never been subjected to the *Daubert* standard. That is, the science was just accepted, but the specifics substantiating the science as reliable had never been put on record. Fingerprint experts repeatedly submitted the same innocuous explanation in their expert testimony – "it's reliable because it's fingerprint science." The basis for the science has never been detailed or articulated for the court system, and judges, with a new gate keeping role, were obligated to have that foundation of fingerprint reliability detailed for the record.

In the recent case of NH vs. Langhill, the trial court judge ruled a particular fingerprint identification as unreliable, as the verification phase of the scientific method employed by the investigating agency, was biased. That is, the verifying fingerprint expert had been advised by the case examiner that an identification had been made to a particular finger; prior to the verification procedure being completed. This ruling, which has since been reversed by a higher court, set off the idea of using blind verification in the fingerprint identification methodology.

The reliability of fingerprints as a science is quite sound; it is the basis for the reliability that needs to be more clearly articulated. The lack of a detailed, scientific methodology for fingerprint identification has created a wave of challenges to an existing staple in individualization. Recent legal challenges have raised issues that will be addressed in this presentation. Further, the scientific basis behind using fingerprints as a means of identification will be explained, as will the position facing attorneys, judges, and police investigators.

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